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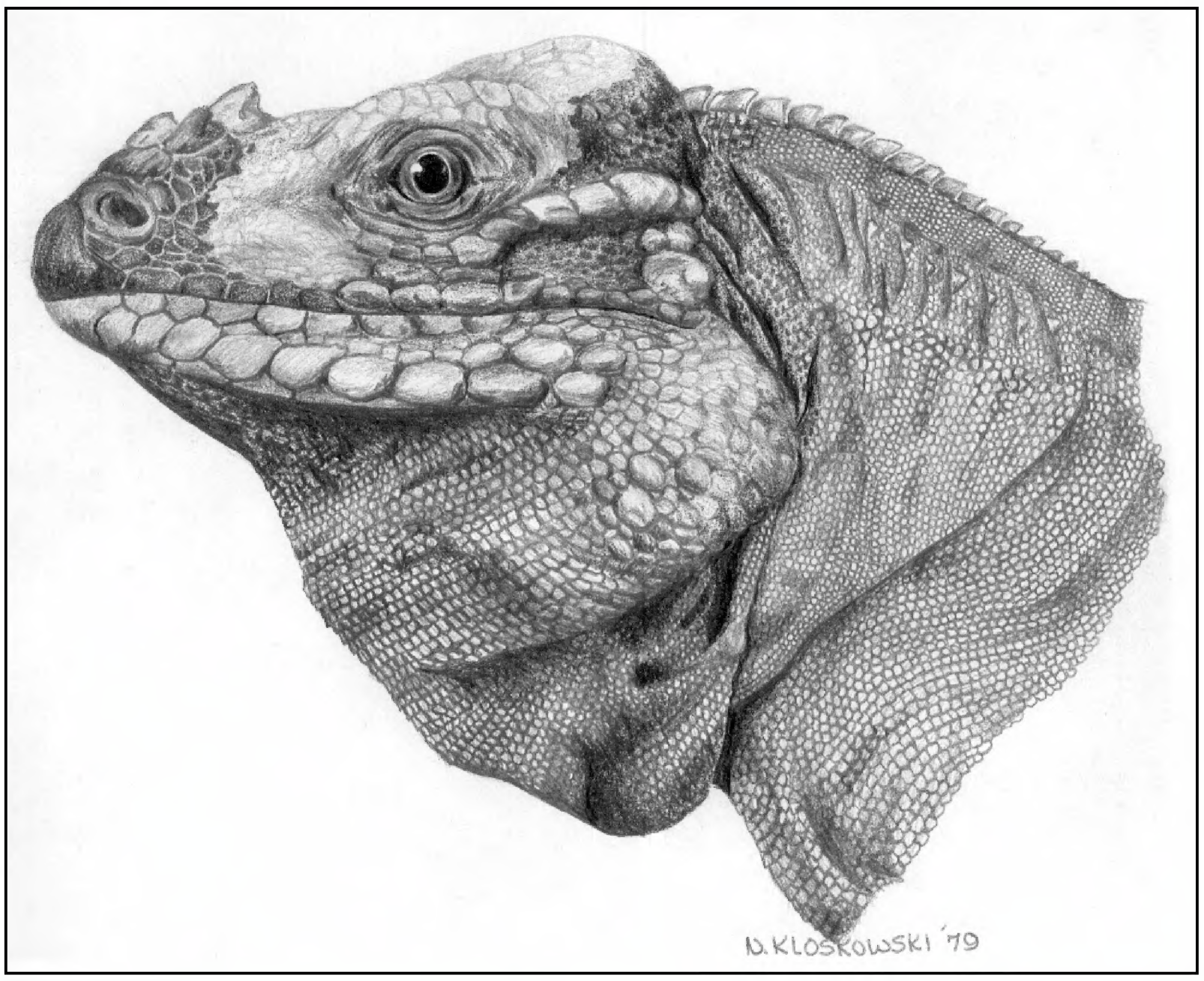

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Three Noteworthy Sightings of the White-throated Monitor, *Varanus albigularis*, in the Kgalagadi Transfrontier Park (South Africa's Section)

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The Kgalagadi Transfrontier Park (KTP) was established in 1999 and is administered by the countries of South Africa and Botswana. Prior to 1999 the South African section was known as the Kalahari Gemsbok National Park, and Botswana's counterpart as Gemsbok National Park. No fence has ever separated the two entities—only unremitting stretches of pristine Kalahari Desert. An imaginary political line is drawn by the dry Nossob River whose course undulates through the park from World's End in the north to Twee Rivieren Camp in the south. In total the park encompasses some 38,000 km^2.

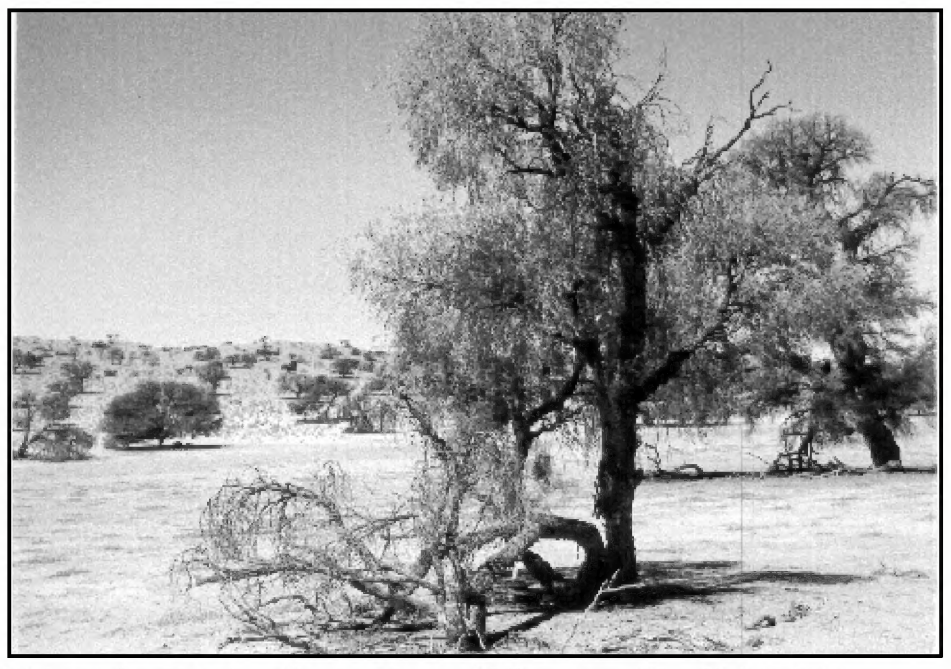
White-throated monitors have been known to occur in this region for some time. A pamphlet (#66) put out by the National Parks Board (circa 1980s), *Kalahari Gemsbok National Park: Reptiles and Amphibians*, clearly lists *Varanus albigularis* as belonging to the park's herpetofauna. On the other hand, the range maps in Bill Branch's (1988, 1998) excellent field guides do not indicate the lizard's presence. However, past sightings had only been verbal recollections by qualified individuals (park personnel, bushman rangers), but without photo coverage. It wasn't until Rod W. Patterson and Frank Vallée found and photographed a specimen in September of 2000 that we had documented evidence (Bayless et al., 2002). I have visited the Kgalagadi Transfrontier Park on numerous occasions and during various climatic conditions, starting back in March of 1983, but have never been fortunate enough to find this species in situ.

Sighting One: 9 October 2002. Each of the camps in the KTP has a ledger into which most tourists record worthwhile sightings. While checking such a ledger in Nossob Camp I came across an entry that immediately raised my eyebrows; the tourist responsible for my acute enthusiasm was more than likely of Italian or Spanish heritage. The wording read: large *varano* at 1830 hrs. near Marie Se Gat [waterhole on the Marie se Draai loop SE of Nossob Camp along the western edge of the dry Nossob River]. Weather conditions for this day were as follows: very cool in the morning, only 17°C at 0530. Windy overnight, with occasional gusts throughout the day. Maximum temperature 32°C with a relative humidity of 20%.

Sighting Two: The following day, in Bitterpan Camp deep in the central dunes, I mentioned this sighting to Sue and Jan van Dam who shared the camp with us, and to my surprise they too saw a large monitor on the 9th of October, and pretty much in the same location. However, they spotted the lizard at 0730, some 11 hours sooner. According to Sue and Jan the lizard probably measured in excess of one meter in total length and walked some 100 meters off the dirt road, almost in the center of the Nossob River, just off the Marie se Draai loop, approximately 2 km from where you leave the main road out of Nossob Camp. Some water puddles remained on the road and in the Nossob River from rains the previous days. They watched the lizard moving in and out of tall vegetation, circumventing several acacia trees, and always keeping its body and tail well off the ground. When it finally disappeared from sight it was moving in a southeasterly direction, towards the waterhole of Marie se Gat. No photos were taken. It would have taken a sizeable telephoto lens (at least 400 mm) to obtain an identifiable image. Nevertheless, Sue and Jan van Dam were acute nature lovers and definitely knew what a monitor (leguaan) looks like. Their sighting and description must be taken as totally correct.

** Actually I tend to believe that Sighting One and Sighting Two may have involved the identical lizard, even though the distance between the two locations is rather extensive; from 0730 to 1830 the lizard must have meandered several hours during the heat of day and in bright sunlight. However, this region is littered with numerous camelthorn acacia trees (both live and in a state of decomposition), plus driedoring bushes and plenty of grassy vegetation. This botanical substrate would have offered our wandering monitor plenty of shady retreats during its march, plus the occasional water puddle to drink out of. Having watched adult monitors in the wilds before, it is amazing how far they can walk in a relatively short period of time. **

Sighting Three: February 2003. Recorded by Cronje Rademan, at that time employed by the KTP as a ranger and stationed at Mata-Mata Camp. The monitor was an adult male 1.35 m in total length, but relatively lean in appearance; no ticks were found on its body. Weather conditions that day ranged from warm in the morning, to scorching hot in late afternoon. The lizard was "leisurely walking" in bright sunlight—out in the open for all potential predators to see—moving from south to north along the western edge of the dry Auob River, only a few kilometers SE of Mata-Mata Camp. When



Habitat for Sighting Three. Several kilometers SE of Mata-Mata Camp, along the western edge of the Auob River. Trees are camelthorn acacias, *Acacia erioloba*.

pursued it moved along quickly but stopped in the shade of a large camelthorn acacia tree (*Acacia erioloba*) at which time capture was made easy. After examining the specimen it was released again, but very late in the afternoon when those massive acacia trees provided more shade, whereupon it continued in a northerly direction. Unfortunately no photos are available for this individual.

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Book Reviews:

Guide and Reference to the Amphibians of Eastern and Central North America (North of Mexico) **by R. D. and Patricia P. Bartlett. 2006. 283 pp. University Press of Florida, Gainesville. Paperback. ISBN: 0-8130-2950-3. $29.95.**

Guide and Reference to the Snakes of Eastern and Central North America (North of Mexico) **by R. D. and Patricia P. Bartlett. 2005. 342 pp. University Press of Florida, Gainesville. Paperback. ISBN: 0-8130-2935-X. $29.95.**

Guide and Reference to the Crocodilians, Turtles, and Lizards of Eastern and Central North America (North of Mexico) **by R. D. and Patricia P. Bartlett. 2006. 316 pp. University Press of Florida, Gainesville. Paperback. ISBN: 0-8130-2946-5. $29.95.**

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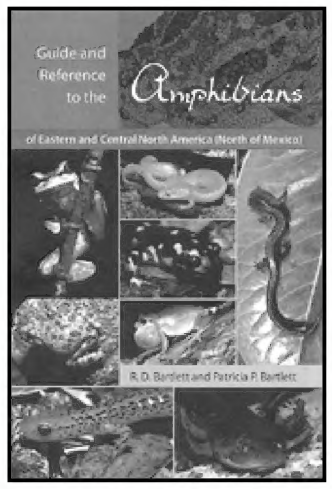
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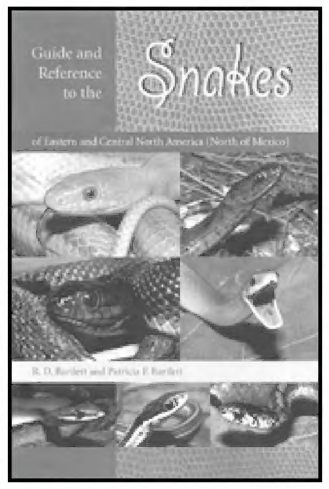

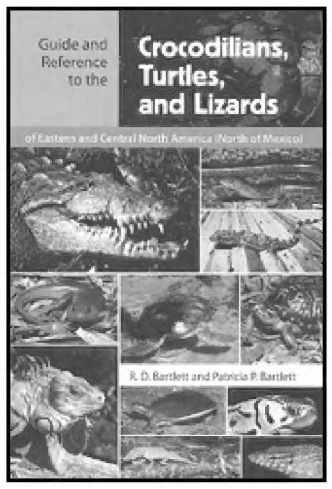
Guide and Reference to the
Crocodilians, Turtles, and Lizards
of Eastern and Central North America (North of Mexico)
R. D. Bartlett and Patricia P. Bartlett

First, a disclaimer: I am pleased to review these publications for the *Bulletin*, but when first approached by Editor Mike Dloogatch for this assignment, I pointed out that authors Dick and Patti Bartlett are long-time friends, and thus there might be cause to question my complete impartiality. Besides, they know where I live, and reprisal and retribution could be swift and severe. However, I reminded (convinced?) myself that Dick and Patti have a great collective sense of humor and would quite possibly appreciate a "fair and balanced" critique of their publications, and so, with only a little trepidation, we decided to go ahead with this review.

Richard D. (Dick) Bartlett is a veteran naturalist, herpetologist, and photographer who has authored, over the last several decades, literally hundreds of popular and semipopular articles, booklets, and books on herpetological and herpetocultural topics. He is often joined in authorship by his wife Patricia (Patti) Bartlett, an equally talented naturalist/herpetologist and (conveniently enough) a professional editor and writer as well. Recent book titles from the Bartletts include *A Field Guide to Florida Reptiles and Amphibians* and *A Field Guide to Texas Reptiles and Amphibians* (both 1999, Gulf Publishing Company), *Florida's Snakes* and *Reptiles and Amphibians of the Amazon* (2003, University Press of Florida), and numerous guides to captive care of various amphibians, reptiles and small mammals published by Barron's Educational Series. I would be remiss in not mentioning one of the classic "field herp" books, *In Search of Reptiles and Amphibians* (1988). Dick's shorter contributions on field herpetology have appeared in *Reptiles* magazine and

other outlets.

The three-book set of guides discussed here represents perhaps the Bartletts' most ambitious project yet. But before delving into some specifics, it might be fair to ask whether there is a need for still another "field reference" on American amphibians and (non-avian) reptiles (hereafter, "herps"). After all, there has been a virtual explosion of focused regional and state herpetological field guides and reference books over the last few decades, not to mention the growing availability of web-based herp identification sites.

Arbitrarily, we might divide regionally focused herp guides into three general (and admittedly overlapping) categories. The first category would encompass the small-format, compact pocket or backpack-friendly books, such as Conant and Collins' well-known *A Field Guide to Reptiles and Amphibians of Eastern and Central North America* (1998) and Stebbins's (2003) companion volume for the west, or the now dated (but still useful) *Audubon Society Field Guide to North American Reptiles and Amphibians* (Behler and King, 1979). Also in this category are a plethora of recent state (or provincial) "pocket" field guides (e.g., MacCulloch, 2002; Tekiela, 2004; Holman and Harding, 2006). Most of these latter are illustrated with photographs, accompanied by a terse text that emphasizes obvious field identification marks and preferred habitat, but may include very brief notes on breeding, feeding habits, etc.

At the other end of the spectrum are the large-format, more substantial (= heavier), mostly state-focused references such as *Reptiles of North Carolina* (Palmer and Braswell, 1995), *Reptiles of Virginia* (Mitchell, 1994), *Amphibians and Reptiles of Indiana* (Minton, 2001), and *The Amphibians and Reptiles of Arkansas* (Trauth et al., 2005). These books generally contain detailed information on morphology, variation, distribution, habitat, and natural history for each species, as well as zoogeography and conservation concerns for the region concerned. Thus they are not intended as field guides and are best considered as useful references for the library shelf.

Falling somewhere in between is a broad category of modest-sized publications occupying the "mushy middle" of herp guides. I tend to think of these as "glove compartment" field references—a bit too bulky to be carried very far afield, but nice for researching a new area prior to traveling there, or settling tricky identification problems and providing additional on-the-spot information on habitats and natural history. Here we might include my own offering, *Amphibians and Reptiles of the Great Lakes Region* (Harding, 1997), *Amphibians and Reptiles in Kansas* (Collins and Collins, 1993), *Amphibians of the Pacific Northwest* (Jones et al., 2005), and the state-focused herp books by Bartlett and Bartlett noted above. It is in this category that I would place the three new books under consideration here. And I would argue here these new references do (at least) address a need—that for a set of modest-sized "glove compartment" field guides that cover the entire east and central region of the United States and Canada. They can supplement (or even replace) a "backback" reference like Conant and Collins (1998) by providing more detailed descriptions of a species' appearance, variation and habitat, and additional (and larger) photographic illustrations.

So let's take a look at these books in a bit more detail. The appearance and format of all three books in the set is essentially the same. The soft covers are colorful and illustrated with a montage of photographs of representative species. The binding seems substantial, though I have yet to subject these books to rigorous field conditions. Once past the title and publication data pages there is a simple table of contents; in the two latest books ("*Amphibians*" and "*Crocodilians, Turtles, and Lizards*") the contents page has representative photos of the basic herp groups covered, a nice touch for the less initiated reader. The contents page is followed by a species list, arranged by family and subfamily (or other well-defined but informal groups), and each species is sequentially numbered. This sequence is followed throughout the book, thus one can look up a species either by its designated account number from the species list, or by page number from the index.

The "Preface" to each book contains some preliminary comments about the animal group in question, including thoughts on present distribution within the landscape, human attitudes, conservation considerations, and the ever changing legal status of herps. Standard acknowledgments follow the preface. The first chapter of each book begins with an "Introduction" in which the authors discuss some basic evolutionary history and physiological attributes of the herp group(s) concerned, along with some additional comments on the effects of human activities on animal distribution—most notably the introduction of non-native species, which are notably well-covered in these books.

The section "How to Use This Book" in each volume describes the basic layout of the book in hand and important identifying features of the herp groups, but is largely concerned with alerting the reader to the many confounding variabilities between individuals and populations within a species that can make identification difficult. Here we are warned about the color phases and rapid physiological color changes exhibited by some amphibians, age-related color changes in turtles and lizards, and the inherent individual and geographic variability in all groups—as well as aberrant conditions (like albinism, melanism, or scalelessness) that can pop up in any animal population, challenging proper identification.

The authors include a "Comment on Taxonomy" in each book, and this topic is worthy of some discussion. One of the biggest recent challenges to an author trying to write a book about any wildlife group, but perhaps especially herps, is in finding names for the animals that will stand the test of even a short period of time. The term "stable taxonomy" has become an oxymoron, and long-established scientific *and/or* common names can be challenged, changed overnight, and even changed back again, with the publication of new and supposedly better studies. Thus, any book on amphibians or reptiles is guaranteed to be taxonomically "out of date" well before the proverbial ink is dry—on the manuscript, let alone the book itself.

In each book the Bartletts make note of the controversies, especially the wide use of molecular data and the tendency among some taxonomists to reject the use of subspecies, and to name non-contiguous (allopatric) populations as full species. However, they have purposefully chosen to retain a more

traditional approach, rather than incorporate newer schemes of uncertain long-term acceptance. This seems a wise course, especially for a set of field guides that emphatically emphasize the external variability present within herp species and populations. These authors note that they relied on the checklist of scientific and common names published by the Society for the Study of Amphibians and Reptiles (Crother et al., 2000), with some divergences "for the sake of clarity."

The wisdom of using a conservative approach can be supported with an example or two. A recent paper of self-described significance (*The Amphibian Tree of Life* [Frost et al., 2006]) offers a dramatically revised classification of the Amphibia. This paper proposes new genera for some familiar North American frogs and toads, such as *Anaxyrus* instead of *Bufo* for most eastern "true toads," and *Lithobates* for such familiar frogs as the leopard, green, and bullfrogs in the traditional genus *Rana* (but see Hillis and Wilcox [2005] for an alternative analysis). Corrections to "*Tree of Life*" are already being published (Frost, Grant and Mendelson, 2006). It has been suggested that these new genera could as well be considered subgenera, to reflect new ideas on relationships while still retaining taxonomically valid, familiar, and stable names (Smith and Chiszar, 2006). The use of subgenera would be thus be available for publications where finer resolution of relationships is desired, but would not be needed in a popular field guide where simple recognition is the primary goal.

As another example, in the "*Snakes*" guide, in their introduction to the rat snake group (traditional *Elaphe*) the Bartletts pay homage to Burbrink's (2001) revision in which *Elaphe obsoleta* is divided into three species (and no subspecies), but then choose to use traditional subspecies divisions in the species accounts. This seems reasonable; already Gibbs et al. (2006) offer data suggesting that Burbrink's revision may itself need revision at some point. The Bartletts also stick to a completely traditional treatment of the "corn snake" group, *Elaphe guttata*, which Burbrink (2002) also splits into three species. And they note the proposal to place the American *Elaphe* into the new genus *Pantherophis* (Utiger et al., 2002), but retain the older name. (For what it's worth, I would have gone with *Pantherophis*, since the American and Eurasian "*Elaphe*" lineages are clearly long-divergent.)

The Bartletts are undoubtedly well-read and fully aware of the many published taxonomic revisions up to the date of publication of these books. They have simply made purposeful (and difficult) decisions as to which new names are better accepted by the herpetological community, which are more tentative, and (perhaps most important) which names better serve their target audience. These three guides do reflect many recent taxonomic revisions, for example the partition of the genus *Clemmys* (placing the wood turtle and bog turtle into *Glyptemys*), the assignment of the blind and grotto salamanders (formerly genus *Typhlomolge* and *Typhlotriton* respectively) to *Eurycea*, and the inclusion of a number of recently described plethodontid salamanders. One minor error in "*Crocodilians, Turtles, and Lizards*" was the implication (page 252) that the genus *Plestiodon* has been promoted as a replacement for the "cosmopolitan" skink genus *Eumeces*. Actually Smith (2005) was suggesting that *Plestiodon* — which the Bartletts provisionally reject anyway — be used only for most North American *Eumeces*.

While most readers of the Bartlett guides will probably not care about esoteric phylogenetic controversies, it is a sure bet that no herpetologist will be completely satisfied with the system adopted therein — or in any other published herp reference for that matter. Taxonomic chaos reigns, with no end in sight. So on to other matters . . .

The introductory chapter in each of these three guides contains a short section on captive care, a topic for which the Bartletts have a great deal of combined experience. In all cases, the actual husbandry suggestions are prefaced or punctuated with philosophical, moral and legal considerations related to the capture and confinement of amphibians or reptiles. They emphasize the importance of researching and obeying local laws, the advantages of captive-bred sources, and the often long-term commitment necessary for the keeping of herp pets. Each guide has respective notes regarding the potential dangers to human health from approaching and handling some herps; the possibilities of *Salmonella* infection are mentioned, and (for obvious reasons) the authors recommend particular caution with the handling of certain large or venomous snakes, large turtles, and crocodilians. The actual comments on captive care are (the authors admit) brief and rather generalized, but are based on long experience and sufficient for the majority of herp species. A few specific examples of species or groups with special husbandry needs are noted, but these books are not intended as care manuals.

Each guide includes a paragraph or two on "Habitats" and how to find herp species in these habitats; this information is under separate headings in "*Amphibians*" and "*Snakes*," but included (in less detail) under the "Captive Care" heading in *Crocodilians, Turtles, and Lizards*."

Rounding out the Introduction chapter in each book is a Key to the Families of the respective herps in eastern and central North America. I am admittedly somewhat skeptical of the necessity of dichotomous keys in field guides aimed largely at the general public. My suspicion is that the average person is probably intimidated by the technical terms used in keys, and most often starts the process of identifying an animal by thumbing through the photos. The Bartletts assume that the reader knows how to use a key, as no instructions are offered. The assumption that someone inclined to use a key will know or be able to figure how to use it may be valid, but a sentence or two describing the process might have been helpful.

That said, the Bartletts' keys are useful in that they *do* familiarize the reader with many of terms used to describe these animals. In the keys in "*Snakes*" and "*Amphibians*," but not in "*Crocodilians, Turtles, and Lizards*," there are accompanying line drawings (simply and clearly executed by Patti Bartlett) that illustrate some important features mentioned in the keys and later text. (For example, head scalation and numbering of scale rows in snakes, parotoid glands in toads [misspelled as "paratoid" in the drawing, but not the legend, on page 7 in "*Amphibians*"], and costal grooves in salamanders.) And, jumping ahead of myself, all three guides offer a useful

glossary (at the end) that defines many words and phrases used in the text. One additional minor gripe about the keys is that once one arrives at a family name in a terminal couplet, there is no page number noting where the accounts for that family begin. Granted this can be found in the index, but giving the page number in the key would be a time-saver.

The species accounts form the "heart" of these guides; these are, as previously noted, arranged by family and then (with exceptions) alphabetically by genus and species. A basic pattern, with slight variation, is carried through all three guides. Each larger catagory (= a taxonomic order, such as "Crocodilians" or "Frogs, Toads, and Treefrogs") is given a brief introduction, with generalized comments about morphology, classification, life history, relations to humans, conservation concerns, etc. Then the same treatment is offered for each herp family, and then (frequently) for each subfamily, and each genus or natural grouping of genera. The result is that the reader actually has access to quite a bit of useful natural history information for these herp groups, despite the authors' insistence that these guides are "intended solely for field identification."

Headings for the species accounts are arranged similarly thoughout the series. Monotypic species are treated individually, while in species with two or more subspecies, one is chosen for a complete description, and the others are described more briefly under "Additional Subspecies." Each account then has several headings, usually (in order) "Abundance/Range," "Habitat," "Size," "Identifying Features," Similar Species," and (sometimes) "Comments." There is an extra description/heading of "Voice" for vocal groups such as frogs and toads, crocodilians, and geckos, and in "*Snakes*" we find an initial heading describing "Disposition" or (when appropriate) "Toxicity/Disposition." Where needed, there are explanatory or comparative drawings showing important identifying characters, rendered competently by Patricia Bartlett, Dale Johnson and K. P. Wray III. The text in all three books is clearly written in a conversational style and I encountered few notable errors or typos (see below).

Each account also includes a map showing the range of the species or all subspecies; the ranges are shown as outlined blotches or patterns and are clear and easy to interpret. I will register one minor gripe about the maps—Michigan, my home state, seems to be the least accurately depicted, as the southern end of Lake Huron is missing, as is Lake St. Clair, leaving the "thumb" area with an unnaturally long connection to southern Ontario. I imagine this slight to be punishment for a memorably and unseasonably cold and miserable May trip that Dick Bartlett made to my area several years ago, when certain "target" herp species responded to the climatic affront by apparently re-entering hibernation for the duration of Dick's stay.

Some readers will be surprised to see so many accounts for introduced species; the Bartletts have given full treatments to an amazing number of "exotic" species that are either breeding or seem relatively well-established in the United States—mostly in Florida, but a few other places as well. The many introduced anoles, iguanas and geckos are not too surprising, but finding species like the Australian green treefrog, South American yellow-spotted river turtle, Java file snake, Burmese python and California kingsnake listed in an "eastern" field guide can be downright jarring!

Another "bonus" for readers are the authors' personal field notes and stories scattered throughout the species accounts and set apart in a contrasting font. While not strictly necessary for a field guide, these insertions are instructive and highly entertaining, and make an already readable text even more enjoyable.

I suspect that most users of modern faunal guides will first flip through the illustrations when trying to identify a specimen just seen or in hand. The Bartlett guides are well-suited to this usage, being profusely illustrated with photographs of essentially all species and subspecies of herps in the covered area; morphologically variable species, like the eastern garter snake and corn snake, may have several variations illustrated. The photos range from adequate to (mostly) good or excellent in quality and utility. With few exceptions the photos were taken by Dick Bartlett, who has personally traveled thousands of miles, criss-crossing the continent, in an effort to photograph every morph or subspecies of native (and introduced) herp, in its natural environment whenever possible.

Unfortunately, there is one notable problem regarding photographic reproduction, which I suspect was largely out of the control of the authors. A number of photographs in (especially) "*Amphibians*" and (to a lesser degree) in "*Snakes*" and "*Crocodilians, Turtles, and Lizards*" were reproduced too dark, or with insufficient contrast, at least in my review copies. While not seriously compromising a particular photo's utility, it does reduce the overall impact, and I hope this can be corrected in future printings or revisions. There are also a very few out-of-focus photos that could also be corrected or replaced. That said, the photographs in these three guides are an amazing record of herpetological diversity in eastern North America, and alone are well worth the purchase price.

Rounding out each of the Bartlett guides is a serviceable glossary, an up-to-date "Additional Reading" reference section, and an index to both scientific and common names. Although these three guides are clearly written and generally well-edited, I will here point out a few minor errors, problems, and inconsistencies:

- In "*Amphibians*," the range map for the blue-spotted salamander (p. 126) could be misleading. "Pure" blue-spotteds do occur within much of lower Michigan and Wisconsin shown only as an "intergrade zone." The whole topic of hybrid polyploidy in several species of northern *Ambystoma* is incredibly complex, and gets more complicated all the time. The Bartletts have (wisely) opted for a simplified and abbreviated discussion of the hybrids. (To be fair, the maps and discussion for hybrid *Ambystoma* in Conant and Collins (1998) are equally simplified and misleading). Also, under small-mouthed salamander on page 131, "Kelly Island" should be "Kelleys Island."

- In "*Crocodilians, Turtles, and Lizards*," the photo on page 104, identified as a Blanding's turtle, is really a Blanding's × wood turtle hybrid that Dick Bartlett photographed in my enclosed pond in Michigan a few years ago. I take some blame for this error, as I should have warned him that the hybrids look very similar to "pure" Blanding's turtles when they are

partly covered in algae and only the characteristic yellow throat is showing!

• On page 120, the diagram by Dale Johnson, showing soft-shelled turtle field marks, inexplicably switches to using the genus *Trionyx* instead of the better-accepted *Apalone* used elsewhere in the book. On page 204, the diagram of horned lizard heads does not identify the species indicated by each scale pattern. And at the top of page 210, the genus name *Sceloporus* is misspelled (as *Sceloparus*) in the diagram.

• And, continuing with our nitpicking in "*Snakes*," on page 207 the range map for the brown snake is missing the box pattern key for the midland brown snake, which does show on the map itself. On page 279, the introduction to the family Elapidae is prominently illustrated with a very nice drawing of a Florida cottonmouth by Kenny Wray; the cottonmouth is, of course, a viperid and the drawing would have best been used in the introduction to this latter family.

Any errors or typos in these books are minor and do not detract from their overall utility. All told, the Bartletts have produced an attractively designed, affordable and very useful set of guides to the native and introduced herpetofauna of eastern North America. I can heartily recommend them to all persons interested in these animals, amateurs and professionals alike. (Note: The Bartletts are reportedly putting finishing touches on a set of herpetofaunal guides for western North America.)

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Bull. Chicago Herp. Soc. 42(5):79-81, 2007

Frances A. Velay, November 25, 1914–January 20, 2007

When most of us admire sea turtle heroes, we think of people who devote their lives to working directly with animals in research or care-giving, or who promote conservation on their behalf. This article recognizes instead a modest woman who stayed largely behind the scenes and often wanted to be anonymous. Yet, she enabled much front-line turtle work for the past twenty-some years. Through her generous funding of scientists, graduate students, conservationists, universities and nonprofit organizations, she enabled and vicariously participated in the study and protection of turtles and other animals. Given that she resented the negative connotation of that noun, I will switch to her preferred term, "creatures." For whether they bore scales, fur or feathers, they likely benefited from the philanthropy of Miss Frances A. Velay, late of Philadelphia, Pennsylvania.

This patron donated up to $3 million a year for the past couple decades, mostly to save wildlife from harm caused by humans. She regularly granted $10,000 to $850,000 to a who's who of institutions, including the Charles Darwin Foundation, Caribbean Conservation Corporation, Duke Marine Lab, Leatherback Trust, Environmental Defense, Rainforest Alliance, WIDECAST, World Wildlife Fund, Wilderness Society, Planned Parenthood, Conservation International, Zoological Society of Philadelphia, Greenpeace Fund, American Wildlife Foundation, Chelonian Research Foundation, World Society for the Protection of Animals, American Bird Conservancy, Land Trust Alliance, Fund for Animals, Jane Goodall Institute, Scientists Center for Animal Welfare, Zoo Montana, International Crane Foundation, Humane Society of U.S., Earth Justice, Natural Resources Defense Council and, my favorite, The Ocean Conservancy. At the February 2007 Annual Symposium on Sea Turtle Conservation and Biology held in Myrtle Beach, South Carolina, nearly every paper credited her foundation with financial support, while the Best Student Conservation Paper award was given in her memory.

Miss Velay's devotion to creatures began modestly, with her care of eight red-eared sliders from the 1950s to the 1990s. She purchased her first turtles from a dime store that painted their shells, which seemed cruel to her. She scrubbed off the noxious substance and urged shopkeepers to halt that practice. With her tending, all the turtles thrived except Sick One, whom she rescued in 1959 and could not revive. She spoke fondly of the rest: Panaphil, who died in 1991 at nearly 38 years old; Don Juan, the communicative, intelligent, and tender male who lived 20 years; her favorite, Beautiful, who lived to 12; Chlorophyll, who lived 9 years and mated with Olive, a male who lived 7 years; and Harlequin, a female who never mated. When the final turtle, Tiny Weeny, was euthanized in 1994, it held a longevity record of 42 years, documented in *Longevity of Reptiles and Amphibians in North American Collections* (2nd ed., 1992, SSAR Herpetological Circular No. 21) and in *Bull. Chicago Herp. Soc.* 29(11):259, November 1994.

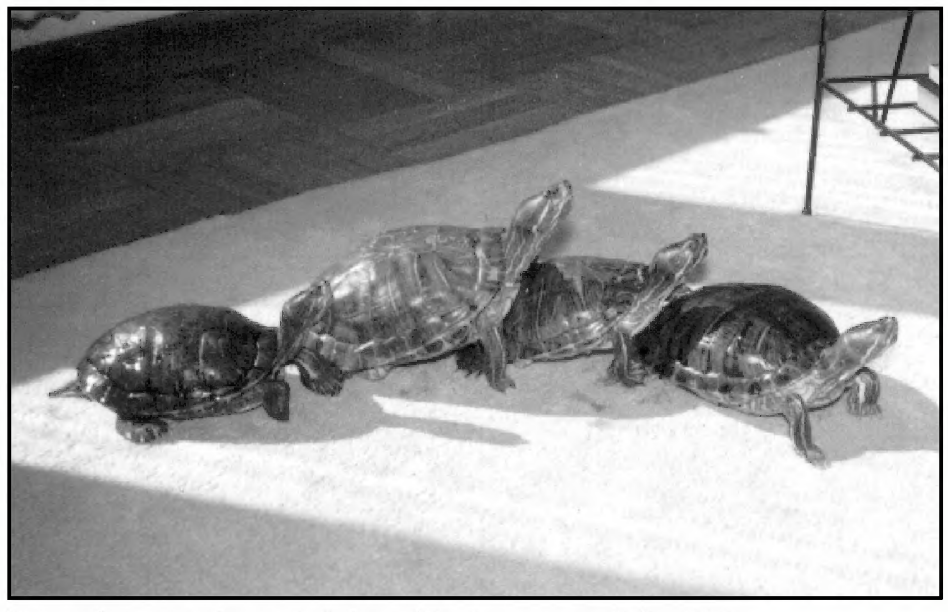
Never married, with no other pets, Miss Velay grew close to these turtles and learned to read and respond to their subtle body language that busier people might ignore. When the turtles clambered up the side of their bathtub, she would lift them out to the floor. At times, they followed her around the apartment or approached her to be fed or petted. She learned that the chin was their favorite spot; if they wanted to be scratched, they would stretch out their necks and wink. One female learned to walk to the outer door and look back, then bump it with its shell, at egg-laying time. Miss Velay then would carry her to the public garden six floors below and help her with a spoon to dig in the hard ground. Miss Velay always retrieved the eggs to keep them from hatching where they wouldn't survive. Then, her visitors got to handle frozen turtle eggs and receive a short course in herpetology and conservation, whether wanted or not.

The turtle of greatest interest to herpetologists and conservationists was Panaphil. The creative name means "loving all" and was later chosen by Miss Velay for her conservation-directed foundation, denoting care, affection, and respect for all life. This describes Miss Velay herself, highlighting her belief that all creatures have an inherent right to exist regardless of their usefulness to humans. She also was adamant that humans must do better in stewarding this precious planet.

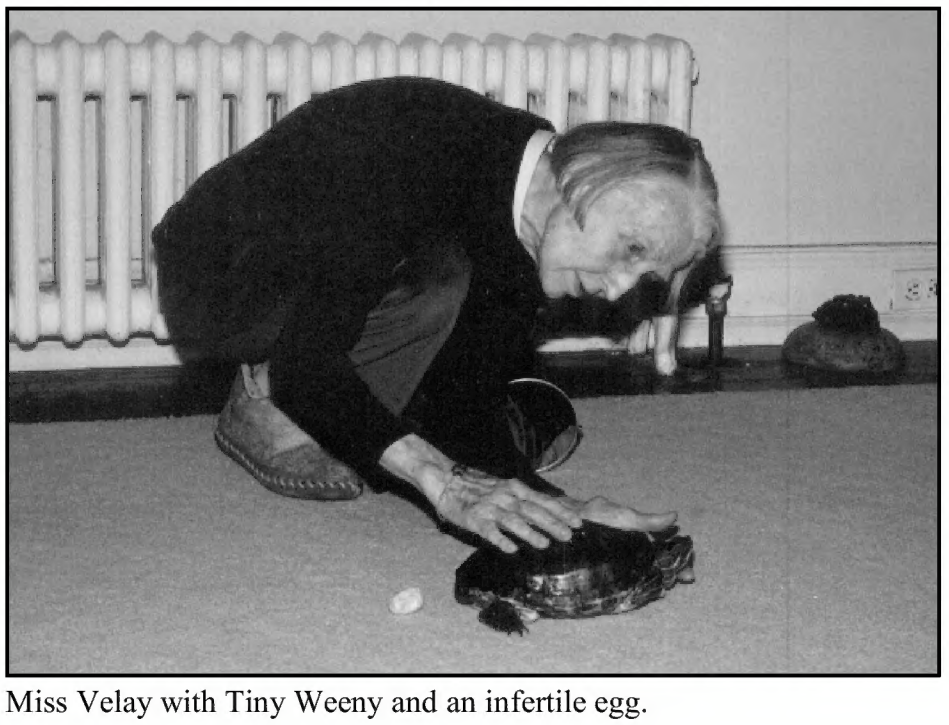
Besides turtles, Miss Velay raised green anoles (American chameleons) in a large terrarium in the lobby of her apartment building. She was proud that her adults produced 15 neonates between 1989 and 1992. I raised several of these to the point of grandbaby-anoles (documented in *Bull. Chicago Herp. Soc.* 29(1):1-4, January 1994, and 30(5):89, May 1995).

For years, Miss Velay anxiously anticipated the annual arrival of mallards which nested near a pond in the garden. She carefully observed and documented the dates of appear-

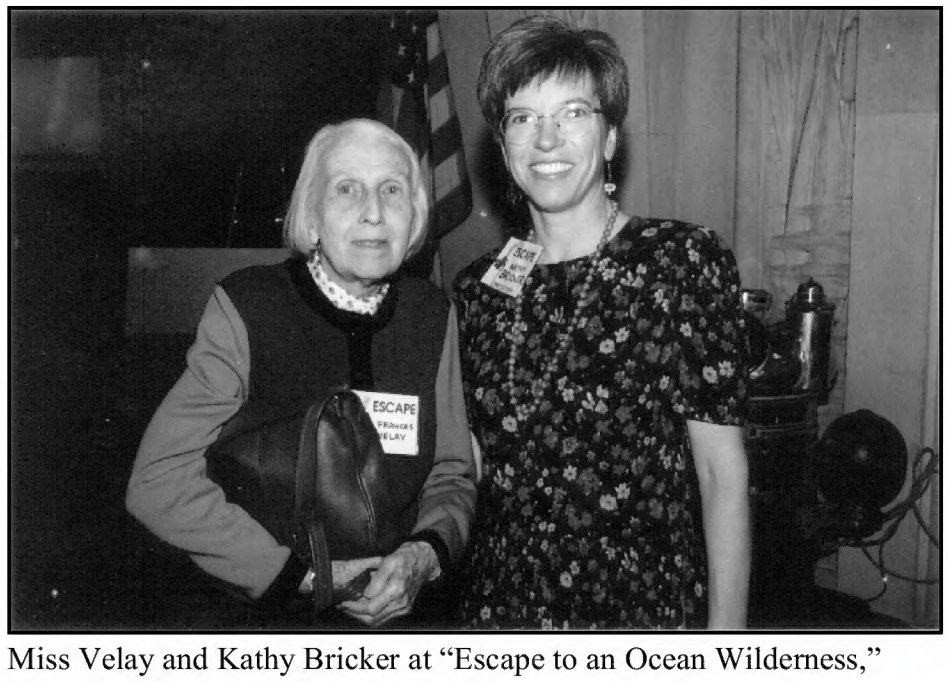
> Sorry to hear Miss Velay has died. I remember Frances with great fondness, She shared with our group her expertise in raising turtles, especially red-ear sliders (of which she had several individuals in excess of 20+ years.) She was a fine photographer, and contributed some wonderful photographs to our early Bulletins as well as the International Turtle and Tortoise Magazine.
>
> As a volunteer, she assisted many of our members with translation of older French herpetological literature. Miss Velay also was a very kind judge in our old reptile shows; she could always find something good with every turtle, although she was very strict when she thought nutritional or environmental conditions were not optimal.
>
> In her later years, it was too difficult for her to travel to our meetings, and I recall a conversation where she wanted me to know her absence was not due to lack of interest in our society. In 1994, Miss Velay also gave PHS a very generous "parting donation" to help sustain our mission.
>
> She will be missed.
>
> Mark Miller, President
> Philadelphia Herpetological Society
> http://herpetology.com/phs.html
> February 2007



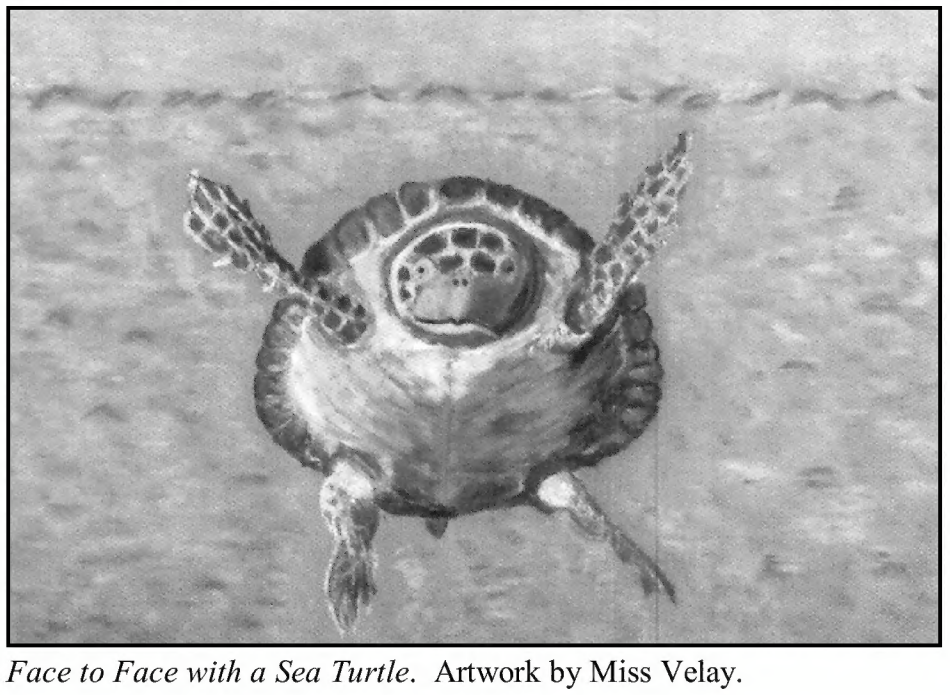
Four of eight red-eared sliders. Photograph by Miss Velay.



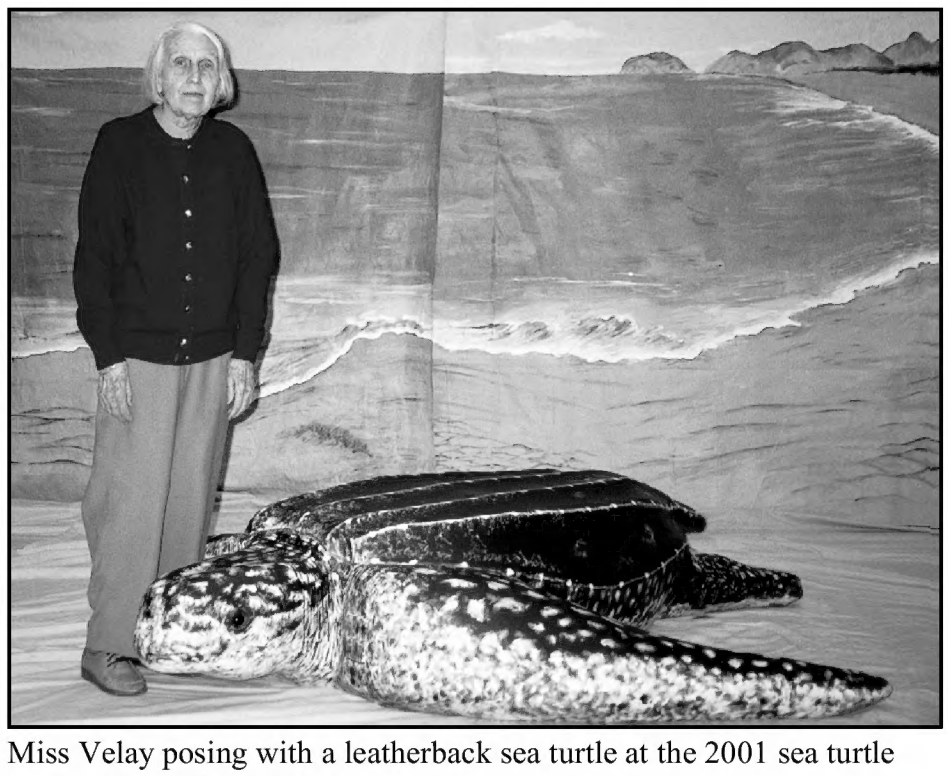
Miss Velay with Tiny Weeny and an infertile egg.



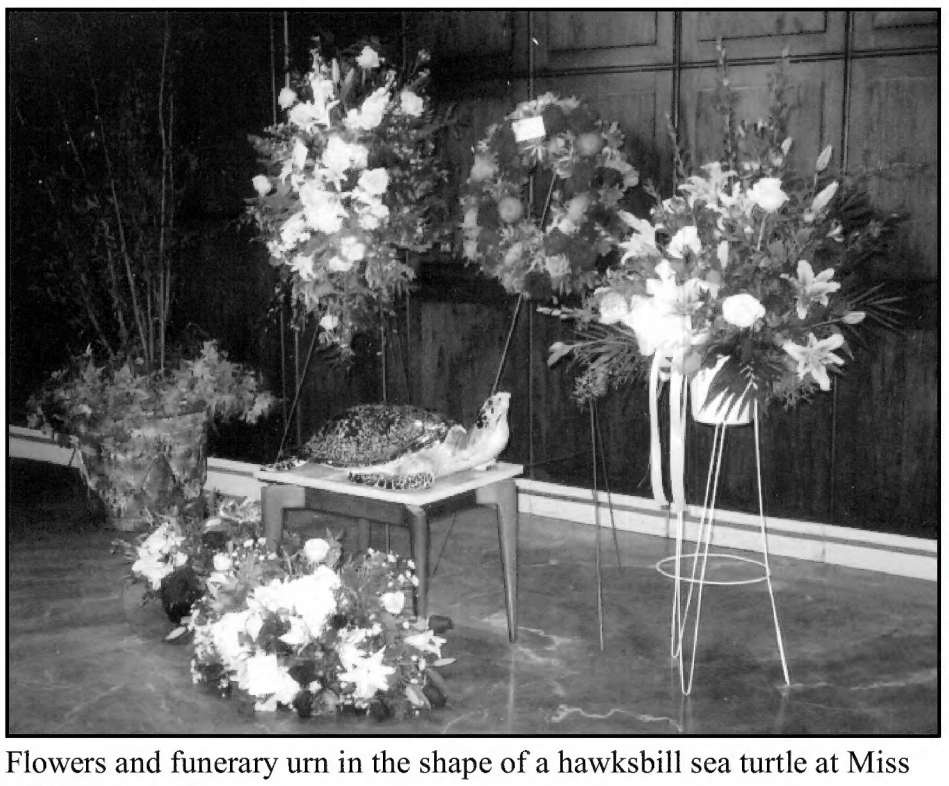
Miss Velay and Kathy Bricker at "Escape to an Ocean Wilderness," New York Yacht Club, April 26, 1999.



Face to Face with a Sea Turtle. Artwork by Miss Velay.



Miss Velay posing with a leatherback sea turtle at the 2001 sea turtle symposium in Philadelphia.



Flowers and funerary urn in the shape of a hawksbill sea turtle at Miss Velay's funeral.

ance, mating, egg-laying, hatchling development, and overall behavior of the ducks. In her late 80s, she even ventured out in the middle of the night in her robe at their cries, to set a live trap for cats that might be stalking them. To her, these mallards were as precious as California condors. When Miss Velay grew physically unable to walk to the ducks, she threw bread crumbs for them out her sixth-floor window. As soon as they heard it open, a dozen ducks scooted across the yard, quacking their excitement.

These animals were important companions to her, and she spent hours admiring and caring for them. They formed the bridge to wilder creatures that she never met in person (and never wanted to, since she was afraid of being in the woods). Even so, she sought to protect them through her philanthropy. She favored the "under-animals," those she thought other people would deem too ugly or unworthy to support.

Miss Velay was a multifaceted Renaissance woman. She was a scientist, having earned a Lic.S.C. at the University of Paris, followed by an M.S. in Chemistry from New York University in 1947. She avidly read the *New York Times*, especially the science section, to keep abreast of the latest discoveries. Characteristic of her meticulous nature was a large loose-leaf binder containing a page for each of dozens of charities, in alphabetical order, with every gift detailed in date order. Whenever a request came, she checked this record to make sure she didn't mistakenly give more than intended.

Miss Velay tended her inherited money with similar care. At her funeral, bankers and attorneys told of her insistence that the funds be invested well. She scrutinized the annual reports of every company in which she held stock, another list that was many pages long. Once she insisted on selling a stock because she detected a pessimistic tone to the chairman's letter. Shaking his head, her broker followed her order. To his surprise, the stock plummeted after they sold and the company went bankrupt a few months later.

Obviously, she knew a lot about human nature. She studied philosophy at the University of Pennsylvania and abroad. Her own philosophy was clear: think positively, enjoy the beauty of life, and do what you can to help one's fellow creatures, including humans. To directly assist the latter species, Miss Velay established the separate Uphill Foundation. Complementing the Panaphil Foundation, it donates about $300,000 a year to recipients such as Project Hope, the Heifer Project International, Pro Literacy Worldwide, Horticultural Society of New York, Oglala Lakota College, Kennedy Institute of Ethics, Trickle Up Program, Center for Book Arts, and CARE. Her grants were made both generously and carefully, as she scrutinized the annual reports and met frequently with organization representatives to be sure they accomplished what they promised.

In addition to her financial prowess, Miss Velay was a gifted violinist, performing classical music in orchestras in Philadelphia, Oklahoma City, and Washington, D.C. She was a photographer, eager to show visitors her pictures of great egrets that sometimes fished in the pond. She was skilled at writing and editing, and would surely have improved this obituary, always glad to lend a thoughtful critique.

As was obvious from glancing around her apartment, she was a prolific artist, executing chalk pastels of wildlife. Most reflected her interest in the under-animals—dinosaurs, lizards, goldfish, tortoises, frogs, kiwis, bullheads, owls, usually in soft earth tones of beige and ochre. One painting, dated November 1957, depicts a turtle strolling near a bank. Beneath the image, Miss Velay wrote "Peaceful river life: Turtle taking a walk fraught with no danger." That was in a sense her vision statement. She wanted the best and safest life possible for all creatures. She once showed me several sea turtle photographs from Dr. Jim Spotila and asked with innocent incredulity, "How could anyone possibly harm such beautiful creatures?"

Despite her wealth, Miss Velay lived frugally, often struggling onto a bus to avoid hiring a cab once she could no longer drive. She kept the humblest of apartments in a run-down part of Philadelphia, with furniture she bought in the 1950s and a few cracked plates, eating her meals on a card table. She had her priorities, however: when she moved to Philadelphia, she secured first-class seats for each turtle, so they could ride in comfort with her on the airplane.

Miss Velay left this planet as gently as she lived on it, dying in her sleep on January 20, 2007. In recognition of their quaint aunt's devotion to sea turtles, her nieces and nephews placed her ashes inside a replica of a life-size hawksbill sea turtle, a gift from grantee Dr. Mathuram Santosham from the Center for American Indian Health at Johns Hopkins University. The selection of a sea turtle as her final resting place was inspired, and would have amused and pleased her.

Her family and lawyer will continue her legacy of giving through both charitable foundations, which can be contacted for their grant guidelines through the U.S. Trust Company in New York. They also entrusted The Ocean Conservancy with distributing much of her artwork and extensive turtle memorabilia to conservation advocates or others who would cherish having something of hers. On her family's behalf, I invite anyone reading this, especially if you knew Miss Velay, to contact me for a tangible memento in order to keep alive her memory and her spirit of enriching and saving lives.

Kathy Bricker, kbricker@oceanconservancy.org

Passage

Patient, silent, waiting,
A sea turtle ready for a world beyond
At peace in the sea that buoys her body,

Her spirit yearns for the shore
Marking the end of one long journey
And perhaps the start of others; she cannot know.

The moon rises; tides pull; a beach beckons.
The surf lifts her up
Propelling her gentle weight forward.

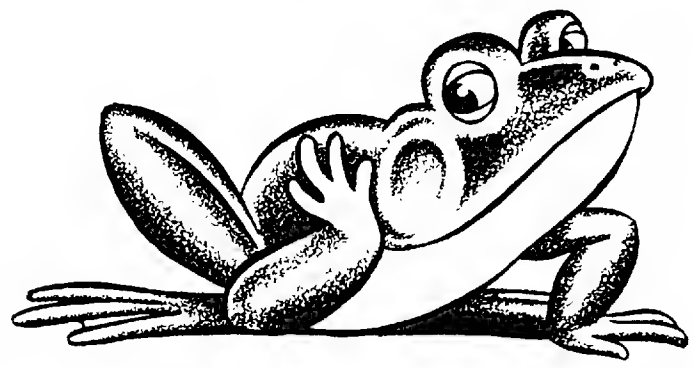
She touches the sand
Still warm from the day's sun
And knows she is home.

– by Kathy Bricker
Shared with Miss Frances Velay the day before her death.
Inspired by Carl Safina's *Voyage of the Turtle*

Bull. Chicago Herp. Soc. 42(5):82-83, 2007

The Tympanum

NAI Honors Conant and Stebbins in Albuquerque



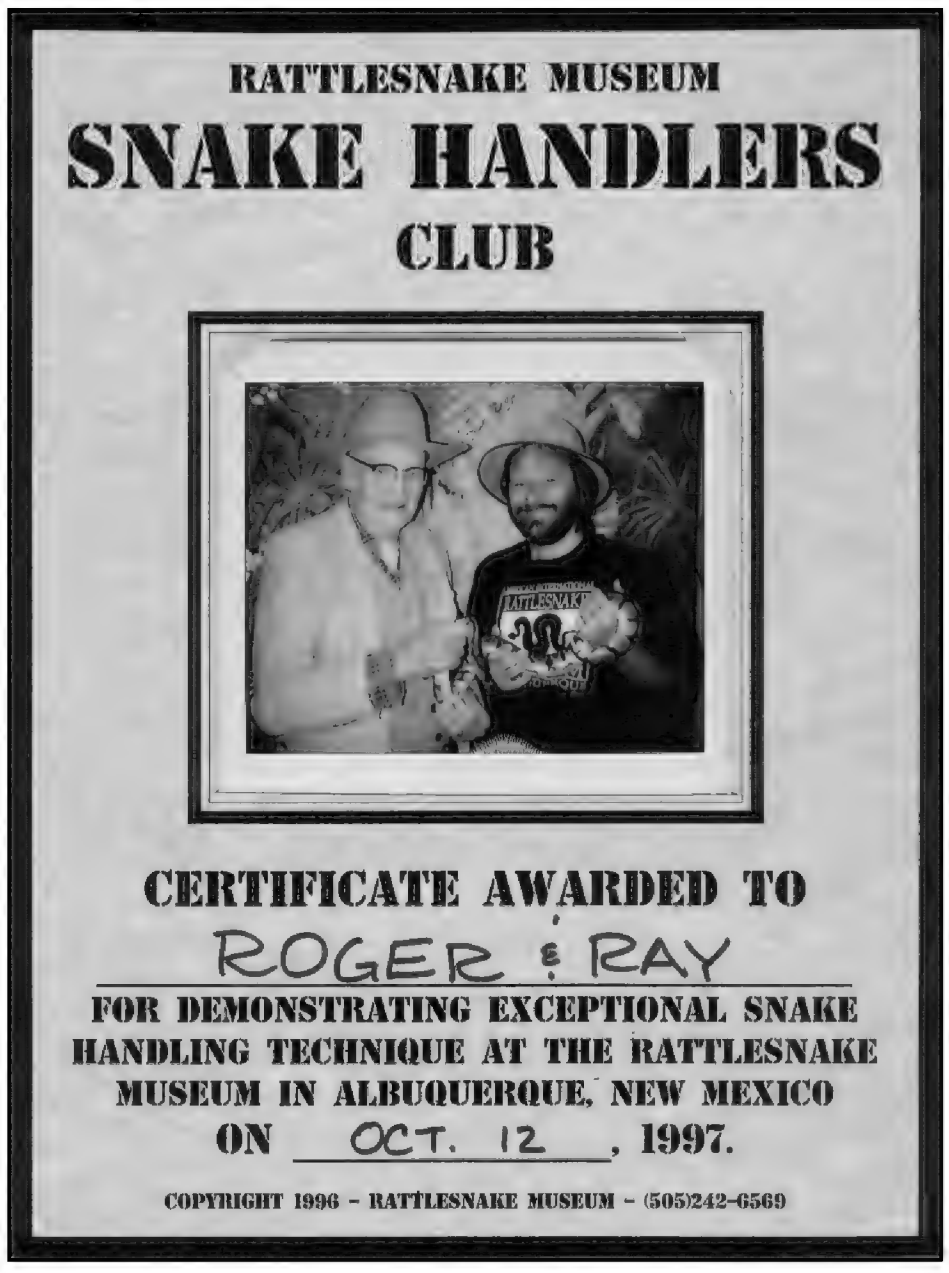
The National Association for Interpretation (NAI) is an organization made up of 5000 members dedicated to advancing the profession of heritage interpretation. Individual members include those who work at parks, museums, nature centers, zoos, botanical gardens, aquariums, etc.

Interpreters of natural history have relied on the two herpetological Peterson field guides for decades. Because of this and for many other reasons, at its 2006 meeting, held November 7–11, NAI bestowed awards to both Roger Conant (posthumously) and Robert C. Stebbins.

NAI's president, Evelyn Kirkwood, decided to create the first-ever Lifetime Achievement Award for Conant. The NAI professional awards committee chose Stebbins for the Senior/ Retired Interpreter Award.

Approximately 400 members attended the award banquet, the final gathering at the conference, on Saturday night, November 11. Evie Kirkwood of St. Joseph County Parks in Indiana, served as emcee. She brought a copy of RC's field guide and talked about how it once helped her to get a job. She mentioned how various NAI members are deeply into herps, for instance award chair John Miller of the Missouri Department of Conservation.

We showed various photos of Roger Conant throughout the years. Most were provided by Kraig Adler of Cornell University. Others came from Brint Spencer of the Philadelphia Zoo. Then, courtesy of the Cleveland Museum of Natural History, we showed a two-minute video segment of him accepting his David S. Ingalls, Jr., Award of Excellence at the Museum on June 1, 1996. In it, he mentioned how he received numerous letters stating that the writer had found a snake an eighth of an inch longer than the record size in his field guide. This brought laughter from the audience, both in 1996 and 2006!


RATTLESNAKE MUSEUM
SNAKE HANDLERS
CLUB
CERTIFICATE AWARDED TO
ROGER & RAY
FOR DEMONSTRATING EXCEPTIONAL SNAKE HANDLING TECHNIQUE AT THE RATTLESNAKE MUSEUM IN ALBUQUERQUE, NEW MEXICO
ON OCT. 12, 1997.
COPYRIGHT 1996 - RATTLESNAKE MUSEUM - (505)242-6569

What an honor it was for me to accept this award on behalf of my childhood hero. When I stepped on stage, they projected a somewhat humorous photo of RC and me taken on October 12, 1997 at the International American Rattlesnake Museum in Albuquerque's Old Town. I had spent that Columbus Day weekend with him. He gave me the grand tour of the community, including the Rattlesnake Museum.

Getting up in front of several hundred of your peers can be intimidating. I practiced my "speech" several dozen times. Here's what I said:

"*Hola! Mi Llamo Ramon*. And I'm Roger Conant's biggest fan. I'm the one he mentioned in the video as having kept his letter for decades (held up that letter). But that's nothing exceptional for me, because I never throw anything away.

I first started thinking about honoring him back in 2002 when our meeting here was announced. I hoped he would make it. Unfortunately, he didn't. In fact, I visited the cemetery yesterday (placed my hand over my heart.)

I like to think that there is an afterlife, and that for the past few years, he's been studying the herpetology of heaven (held a hand up toward the sky). You know, where snakes have wings (flapped my arms). And now he's taking a break, and looking down upon us with modesty, humility, thanks and a great big smile.

Roger Conant never threw much away either, and his papers—correspondence, manuscripts, photos, and awards—are archived at the American Museum of Natural History in New York City. That will be the final destination for this, too.*

Muchas Gracias!"

I tried to use some humor, including the self-deprecating brand. I injected Spanish because, after all, we were in New Mexico, and RC always prided himself on his grasp of *Espanol*. I tried to be poignant. I hope I did okay. A friend videotaped it, so someday I hope to be able to see it again.

Very respectfully, I tried again and again to convince Dr. Stebbins to make the long trip to New Mexico, but he finally,

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* I sent the award plaque to Roger Conant's son, Roger K. Conant, of the Philadelphia area.

and understandedly, declined due to his age. We showed photos of him provided by the National Park Service and University of California at Berkeley. I figured the audience would tire of me at the podium, so his friend and colleague, Alan Kaplan, of East Bay Regional Park District in California, accepted on his behalf.

After the ceremony, a woman came up to me to thank me. She had grown up in Philadelphia and had been in a zoo commercial with RC when she was nine years old!

For more information about NAI, visit the website at www.interpnet.com

I'd like to thank Bob Myers of International American Rattlesnake Museum in Albuquerque. See www.rattlesnakes.com Bob took time away from his hectic schedude to transport me to Roger and Isabelle Hunt Conant's grave at Sunset Memorial Park. RC's colleagues, Professor Emeritus Clifford Crawford of the University of New Mexico and Donald W. Duszynski, Professor and Director of UNM's Museum of Southwestern Biology, kindly provided directions to Roger Conant's Christmas Ridge property in Torrance County. Bob Myers also drove me there. We are not sure if we found it. Our adventure trying may be worth writing up some day! **Raymond Novotny, Ford Nature Center—Mill Creek MetroParks, 840 Old Furnace Road, Youngstown, OH 44511**.

Bull. Chicago Herp. Soc. 42(5):83-84, 2007

What You Missed at the April CHS Meeting

by John Archer
j-archer@sbcglobal.net

I've always thought that being a researcher would be cool. Most of the time I'm not too particular about what type of research, I just picture myself moving purposefully between lab benches festooned with Bunsen burners, beakers and glassware bent into surreal shapes while various colored liquids boil and bubble and mechanical contraptions hum and clack. My handsome, thoughtful face is set off by my white lab coat, and my wise deep-set eyes seem to peer into the inner workings of the universe. Suddenly my face illuminates, and with a shouted "eureka!" I discover the cure for . . . uh, sorry. I got a little carried away there. That's my 1950s childhood version of how scientific research works. Of course, I now have a more realistic view of what research involves. I know that it usually takes months or years of hard, frequently mind-numbing work, much coordination, constant struggles for grant money, political pressure to produce specific results, clashes with peers over publication rights . . . oops, now I'm sliding in the other direction. Let me take my medication and smooth out these mood swings.

There, I've got that under control. I know that the true picture of research lies somewhere in the middle of those extremes, but when I meet someone like Dr. Carl Gerhardt, I can't help but feel closer to my '50s image of what doing science is all about. I had the pleasure of welcoming Carl and his wife Dayna to Chicago, and had a chance to spend a few hours in their company before Carl's talk at the April meeting. I once again realized how lucky I am that my membership in the CHS allows me to hang out with people of this caliber.

Carl graduated from the University of Georgia with a degree in zoology, did his doctoral work at the University of Texas at Austin under the famous frog acoustics expert Frank Blair, spent about a year at Cornell University doing post-doc work, and has been a professor at the University of Missouri-Columbia since leaving Cornell, currently holding the title of Curators' Professor. I had to look that last title up, and trust me, it's a big deal. I usually google our guests for more background information, and when I googled Carl, I found his curriculum vitae runs fourteen pages. He's published many papers, co-written a book, *Acoustic Communications in Insects and Anurans*, published by the University of Chicago Press, and in 2006 received the Distinguished Herpetologist Award from the American Society of Ichthyologists and Herpetologists. He and Dayna have traveled to Australia, Germany, Ecuador and many other places in the world, frequently staying for many months to conduct his studies in frog communication. They both have great stories which they convey with wit and erudition. Did I mention that I thoroughly enjoyed their company

Why did Carl's talk draw me back to my 1950s picture of research? He's conducted cutting edge research all over the world, and it's obvious from his presentation and his demeanor that he's not grown bored with the study of frogs or most other things. Carl is one of those individuals who can make science seem so simple that you think anyone could do it.

He started by summarizing why he does what he does, that is, studying frog acoustics. Sound is a very good form of communication. Sound can carry a great deal of information with relative precision over long distances and around obstacles, and does not require light or limbs. It would be difficult to imagine humans having as complex a culture or as developed an intellect without sound. Acoustic signals are easy to record and analyze, certainly much easier than visual signals and far easier than olfactory signals. They are easy to synthesize and can be played back with a high level of fidelity in a controlled environment. Many animals rely heavily, if not exclusively, on acoustic signals.

That explains the reasons to study acoustics, but why frog acoustics? Frog calls are stereotyped calls, with individuals and species showing consistent patterns of calling easily replicated and manipulated with artificial sound systems. Female frogs are only attracted by sound, and not by the size, shape, or color of the males. To demonstrate that single-mindedness, Carl played a short video clip of a female frog using zigzag leaps as she narrowed the distance between her and a black box speaker playing a recorded male's call. She eventually leaped right onto the speaker, and, presumably, was disappointed

when the speaker did not clasp her in amplexus. Both females and males respond to calls, providing more study directions. Our knowledge of the mechanics of frog auditory physiology is good. Geographic variation within some species allows study of nascent evolution, and the many species of frogs allows comparisons of many different calls and more mature evolution. When Carl showed the slides that listed these points, I was hooked. I can look at all these reasons and think that they're logical reasons to study frog acoustics, but it takes a special thought process to come up with the list in the first place, the scientists' approach to problems. To Carl, I think the lists may have been obvious; to me, they're revelatory.

Okay, perhaps you don't share my fascination with the scientific method, but you don't have to in order to have enjoyed the rest of Carl's presentation. With video clips, photos, charts, and maps, and in spite of being hampered by an incompetent projectionist (I am going to read up on PowerPoint), Carl educated and amused us with frog acoustics. The following are some samples.

Gray treefrogs (*Hyla versicolor* and *Hyla chrysoscelis*), can only be identified to their respective species by DNA analysis, or calls. When calling, they tend politely to alternate, but when they do occasionally overlap, there is fierce competition to be the first caller since females are more attracted to the first caller.

Frog calls are divided into advertisement (labeled that rather than mating calls because both the males and the females respond) and aggressive calls, which include the release call. Males use release calls when clasped by another male, and females use the call when "they have a headache."

Calling is a physically draining activity, which Carl compared to running a marathon, so it's important that males get it right. If more stimulation is better, what is more stimulation and how much more is effective? Longer, louder, and more complex calls are more attractive to females, but males can't afford to waste energy on calls that are ineffective. For instance, adding almost any sound to the end of a normal call can make the call more attractive, but add the sound at the beginning and the call becomes less attractive.

Females will pursue louder or longer calls only up to a certain distance. As the distant increases, the pursuit becomes more hazardous because of predation, mostly by bullfrogs. The closer, softer or shorter calling males then have a chance to father a new generation.

Females like longer calls, but does that mean they are mating with males that produce the fittest offspring? Since most frogs are externally fertilized, there was an opportunity to answer that question. Eggs from females were fertilized with sperm from both long calling and short calling males. Samples of each were raised under equal and varied controlled conditions, and the offspring of the long calling fertilized eggs were more fit, with the tadpoles growing faster and metamorphosing sooner.

To find out more about Carl Gerhardt, you can go to his web site at http://www.biosci.missouri.edu/gerhardt/index.htm. He's even posted some of the video clips that were in his presentation. If you want to order his book, remember that going through www.chicagoherp.org will benefit your society. Carl brought his computer to the after-meeting get together and showed pictures of his latest finds on a field trip with his students. The comment I heard that I liked the best: "I thought Carl would be very concentrated on frogs, but he enjoys all kinds of herps." Yeah, and lots of other things. Where do we find these speakers?

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Herpetology 2007

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

SOUTHERNMOST MILKSNAKE

D. F. Cisneros-Heredia [2007, Herpetozoa 19(3/4):182-183] notes that the milksnake, *Lampropeltis triangulum*, ranges from Canada and the U.S. south through Central America to western Ecuador. Only the subspecies *L. t. micropholis* is known to reach Ecuador. A specimen collected at km 77 of the Machala-Pasaje-Girón road (3°19′S, 79°30′W, 1100 m), province of El Oro, provides the first provincial record and the southernmost locality of the taxon, extending its range approximately 160 km south. Unfortunately, *L. t. micropholis* is frequently killed in all highland areas because of its coralsnake pattern. Further threats include habitat loss by the high rate of urbanization of previously wild or rural areas, habitat fragmentation, and road-kill. The highland populations of *L. t. micropholis* in Ecuador are at a greater risk of extinction than the lowland populations. Although the species is rather widespread and relatively adapted to disturbed habitats, still unknown systematic entities could hide among some of these populations. More studies concerning systematics and ecology of this taxon as well as conservation programs (including public awareness raising and formal/informal education to stop the killing of snakes, especially in the highly populated highland valleys) are urgently needed.

LEOPARD TORTOISE POPULATION STRUCTURE

M. K. McMaster and C. T. Downs [2006, J. Herpetology 40(4):495-502] note that the leopard tortoise (*Geochelone pardalis*) is the largest of the southern African species and has a wide distribution encompassing a variety of habitats. There is a paucity of ecological information about leopard tortoises in these habitats. The goal of this study was to determine the population density, biomass, sex and age distributions, and morphometrics of leopard tortoises on farmland in the semi-arid Nama-Karoo. Because previous studies have found that body size distributions vary between mesic and xeric habitats, the authors expected that these leopard tortoises would show an increased body size compared to those from more mesic areas. In addition, they expected lower densities of leopard tortoises compared to more mesic areas. In total, 92 tortoises were caught with a male to female sex ratio of 1:1.3 that was not significantly different from unity. Adult females were significantly larger than males with respect to all morphometric measurements. Leopard tortoises (excluding juveniles) were larger than those from more mesic areas. A population estimate of 57.6 ± 4.0 tortoises in a 5500 ha area was obtained using a mark-recapture sampling method and radio-telemetry. Density of tortoises was extremely low at 0.017 tortoises/ha, with a biomass of 0.002 kg/ha. Population density and biomass were lower compared with leopard tortoise populations in more mesic areas. This has implications for the understanding of fitness parameters and conservation of this species in semiarid areas.

SPUR-THIGHED TORTOISE NEST TEMPERATURES

C. Díaz-Paniagua et al. [2006, Herpetological Journal 16(3): 249-257] report that spur-thighed tortoises, *Testudo graeca*, in southwestern Spain lay 3-4 clutches in shallow nests from April to June. The incubation temperature of nests laid in field enclosures in April, May and June was monitored over four years. Mean daily temperature throughout incubation averaged 27.9°C, but displayed a wide daily range, with average maximum values around 41°C (also in nests where hatching success was > 0), and an absolute maximum of almost 50°C. Early (April) nests displayed lower mean daily temperatures than intermediate (May) and late (June) nests, although all nests reached similar high temperatures during the hottest month (July). Incubation temperatures were affected by nest vegetation cover. Incubation length varied from 67 to 129 days. Because the length of incubation was negatively correlated with nest temperature, early nests had longer incubation periods than intermediate and late nests. Hatching success averaged 61% and was mainly affected by variables related to maximum temperatures. Thus unsuccessful nests (i.e., no eggs hatching) were associated with higher temperatures or longer exposure to higher temperatures. Differences in hatching or nest success were not related to the nesting month, but might have been influenced by the location of the nest. Lethal temperatures for embryo development were frequently reached during July, therefore vegetation cover of the nest is likely to play an important role in avoiding deleterious nest environments.

MICROFLORA FROM AMPHIBIAN SKIN

C. E. Culp et al. [2007, Herpetologica 63(1):66-71] note that amphibian populations in several regions of the world appear to be declining due to infectious diseases. While many studies have attempted to identify the pathogens associated with specific declines, very few studies have attempted to identify the natural microflora that is present on amphibian skin. Knowledge of the natural flora that healthy individuals carry may, in some cases, provide valuable information for understanding disease outcomes. The authors isolated the natural bacterial flora found on the skin of apparently healthy adult eastern newts (*Notophthalmus viridescens*), larval bullfrogs (*Rana catesbeiana*) and redback salamanders (*Plethodon cinereus*) living in natural field sites in Virginia. They positively identified five bacterial species from newts, three bacterial species from bullfrogs and four bacterial species and one yeast from redback salamanders. A parallel study examined the physiological profiles of bacterial communities at six sites with newt and bullfrog tadpole populations. A cluster analysis resulted in two main groupings: one for all the water samples and one for all the skin swab samples from the amphibians. This result suggests that only a subset of bacteria in the environment are able to successfully colonize amphibian skin.

DEFENSIVE BEHAVIOR IN THE GENUS *BOTHROPS*

M. S. Araújo and M. Martins [2006, Herpetological Journal 16(3):297-303] note that the genus *Bothrops* encompasses at least six evolutionary lineages that show a great diversification in macro- and microhabitat use. The authors studied the defensive behavior of one species of each of five lineages within the genus *Bothrops*: *B. alternatus*, *B. jararaca*, *B. jararacussu*, *B. moojeni* and *B. pauloensis*. Specifically, they investigated if this diversification in habitat use was accompanied by a similar divergence in the characters related to defensive behavior in the genus. Eight behavioral categories were recorded. Five may be classified as "threatening" (strike, tail vibration, head and neck elevation, dorsoventral body compression and body thrashing); two as "escape" (locomotor escape and cocking); and one as "cryptic" (head hiding). Significant differences were seen in four behavioral categories. There was also a significant difference in the way species elevated their head and neck. Tail vibration and strikes were the most common behaviors presented, and snakes that displayed their tails struck more frequently than those that did not display. A reconstruction of characters related to defensive behavior on a phylogeny of *Bothrops* indicated an increase in the use of dorsoventral body compression in the groups *alternatus* and *neuwiedi*, which may be associated with the invasion of open areas by these lineages.

ECOLOGY OF THE NAMA PADLOPER

P. L. Cunningham and A. Simang [2007, Herpetozoa 19(3/4): 129-134] report that the Nama padloper, a yet-to-be-described species of tortoise in the genus *Homopus*, is associated with weathered granite outcrops in southwestern Namibia where it uses cracks and crevices for thermoregulation purposes and defence. The orientation of cracks and crevices selected as retreat are mainly westward facing. Movement is limited and activity ranges are less than 1 ha in size. Lichens are included in the diet of free ranging tortoises.

INTESTINAL MICROFLORA OF CAPTIVE IGUANAS

A Salb et al. [2007, J. Herpetological Medicine and Surgery 17(1):12-15] note that although frequently criticized for their large size and status as a reservoir for *Salmonella* spp., green iguanas, *Iguana iguana* remain a popular pet reptile in the United States. Because green iguanas can harbor *Salmonella* spp., they can serve as a potential zoonotic health risk for humans, especially young children, infants and those individuals with suppressed immune systems. The poultry industry has had success in suppressing and eliminating *Salmonella* spp. with direct competitive exclusion using non-pathogenic microbes harvested from the flora of healthy chickens. The purpose of this study was to characterize the aerobic and anaerobic bacteria] and opportunistic fungal microflora of captive green iguanas using standard biochemical techniques, with the hope that this information could be used to establish a competitive exclusion product specific to green iguanas. A total of forty-seven different bacteria and fungi were isolated from the iguanas. Twenty of these isolates were characterized to the genus level in this study.

HABITATS FOR JUVENILE FLORIDA BOX TURTLES

A. H. Jennings [2007, Herpetologica 63(1):1-10], to understand habitat use of juvenile Florida box turtles, *Terrapene carolina bauri*, combined data gathered from periodic direct observation as well as from continually monitored individuals on Egmont Key, Florida. Habitat use of juveniles differed from that of adults, but this population did not demonstrate total habitat partitioning among size classes. Juveniles were found most commonly within a single habitat type, Palm Pepper Forest, and did not display the flexibility in habitat use seen in conspecific adults. Microhabitats with dense cover, particularly Brazilian pepper (*Schinus terebinthifolius*), were used preferentially by juveniles in this population. Juvenile turtles were found most frequently in areas with leaf litter and moist soil substrates. Florida box turtles are of conservation concern, and habitat requirements of juveniles should be considered in management decisions.

AMPHIBIANS OF THE GABONESE NATIONAL PARKS

O. S. G. Pauwels and M.-O. Rödel [2007, Herpetozoa 19(3/4): 135-148] provide a synthesis of the current state-of-knowledge of amphibian diversity in Gabon and in the recently created Gabonese National Parks. Preliminary inventories are available for five of the 13 parks: Crystal, Ivindo, Loango, Lopé and Moukalaba-Doudou. Seventy-six (86%) of the 88 species known to occur in Gabon, all ten near-endemics (100%), and three of the six Gabonese endemic species (50%) are currently represented in these parks. Future priority actions should comprise an intensified survey activity to document the distribution of Gabonese amphibians. For those species whose range areas then are not sufficiently covered by the Gabon Park network new protected areas should be established.

EFFECTS OF BULLFROG TADPOLES

L. J. Walston and S. J. Mullin [2007, J. Herpetology 41(1): 24-31] note that a fundamental goal in ecology is to understand how environmental variation influences the distribution of individuals within a population. Laboratory experiments were conducted to examine the population responses of sympatric wood frog (*Rana sylvatica*) tadpoles to native overwintered bullfrog (*Rana catesbeiana*) tadpoles. For periods of up to two weeks, the authors measured growth, activity and refuge use of wood frog tadpoles in small mesocosms with and without an overwintered bullfrog tadpole present. Bullfrog tadpoles had a negative effect on the growth of wood frog tadpoles allotopic (naï ve) to bullfrogs, whereas the presence of bullfrogs had no effect on growth of syntopic (experienced) wood frog tadpoles. There were also differential behavioral responses of the wood frog populations to overwintered bullfrog tadpole visual and chemical cues. Only allotopic wood frog tadpoles decreased activity levels and increased use of refugia in the presence of overwintered bullfrog tadpoles. These observations indicate overwintered bullfrog tadpoles might exert a selective pressure on sympatric wood frog tadpoles, and that experience might allow for the development of strategies to maximize performance for species coexisting with overwintered bullfrog tadpoles.

REPATRIATED ALLIGATOR HATCHLINGS

Y. Temsiripong et al. [2006, J. Herpetology 40(4):415-423] returned (repatriated) hatchling American alligators (*Alligator mississippiensis*) produced from artificially incubated wild eggs to their natal areas. Artificially incubated and repatriated hatchlings released within and outside the maternal alligator's home range were compared with naturally incubated hatchlings captured and released within the maternal alligator's home range on Lake Apopka, Lake Griffin and Orange Lake in Florida. Probability of recapture and total length at approximately nine months after hatching were used as indices of survival and growth rates. Artificially incubated hatchlings released outside of the maternal alligator's home range had lower recapture probabilities than either naturally incubated hatchlings or artificially incubated hatchlings released near the original nest site. Recapture probabilities of other treatments did not differ significantly. Artificially incubated hatchlings were approximately 6% shorter than naturally incubated hatchlings at approximately nine months after hatching. The authors concluded that repatriation of hatchlings probably would not have long-term effects on populations because of the resiliency of alligator populations to alterations of early age-class survival and growth rates of the magnitude observed. Repatriation of hatchlings may be an economical alternative to repatriation of older juveniles for population restoration. However, the location of release may affect subsequent survival and growth.

CONSERVING NEW ZEALAND'S GECKOS

K. M. Hare et al. [2007, J. Herpetology 41(1):81-93] note that visually cryptic, long-lived, diurnal green geckos (genus *Naultinus*) were a significant component of natural ecosystems throughout much of New Zealand prior to human settlement 1800 years ago. Since then, habitat modification and introduced mammalian predators have threatened many *Naultinus* populations, making their survival a conservation priority. However, the visually and behaviorally cryptic nature of *Naultinus* geckos and a lack of scientific attention pose challenges to their conservation management. The authors investigated natural population dynamics of the Marlborough green gecko (*Naultinus manukanus*) to act as a model for understanding the ecology of New Zealand's diurnal geckos and to inform conservation management. The largest known *N. manukanus* population (on mammal-free Stephens Island) has been the focus of several studies along a bush-edge transect. The authors pooled data obtained using mark–recapture, population census, captive rearing of juveniles and radio-telemetric methodologies over 25 yr to examine aspects of their ecology and behavior. The population is female-biased (1:1.7 m:f), a trend that is apparent from birth. Sexual maturity occurs at approximately 4 yr of age and 71% of females reproduce annually. *Naultinus manukanus* are strictly diurnal, arboreal, and opportunistic thermoregulators. Daily movements are very limited, averaging 0.6 m per day, characteristic of the sit-and-wait foraging strategy that they employ. The basic ecological information presented in this paper provides context for the conservation management of *Naultinus* species, which are increasingly recognized as threatened in their current ranges.

CHEMOSENSORY RESPONSES OF FEMALE WALL LIZARDS

J. Martí n and P. López [2006, J. Herpetology 40(4):556-561] note that in many lizards, secretions of males are used in social behaviors, but it is almost unknown which specific chemicals are relevant in mediating these behaviors. Moreover, only a few studies have examined whether lizards can actually discriminate between different chemical compounds. These authors tested for differential chemosensory responses of female Iberian wall lizards, *Podarcis hispanica*, to two lipids (cholesterol and cholesta-5,7-dien-3-ol) found in femoral secretion of males, and which previous behavioral studies suggested may be relevant in female mate choice. The higher tongue-flick (TF) rates directed at cotton swabs containing these two lipids indicated that females detected and discriminated these chemicals from a control. There were no significant differences between responses to cholesterol and to the whole natural femoral secretion from males, probably because cholesterol is the major predominant component in secretions of males. The higher TF rates to cholesta-5,7-dien-3-ol than to cholesterol indicated that females discriminated these two steroids. Moreover, females seemed able to assess changes in concentration of cholesta-5,7-dien-3-ol and responded more strongly to higher concentrations. These results, together with the previous finding of female preference for areas scent-marked by males with higher proportions of this steroid in their secretions, might support that cholesta-5,7-dien-3-ol was a "key" chemical that might be used by females to choose potential mates.

GRAY TREEFROG DIETS

R. D. Mahan and J. R. Johnson [2007, J. Herpetology 41(1): 16-23] report that despite growing concern over habitat destruction, little is known regarding the activities of pond-breeding amphibians in the terrestrial environment. Yet, because most pond-breeding amphibian species spend the majority of their time in terrestrial habitats, it is important to understand what role terrestrial habitat plays in their life history. The authors examined the stomach contents of the gray treefrog (*Hyla versicolor*) in central Missouri using a stomach-flushing technique. Treefrogs were stomach-flushed; stomach contents were dried and weighed; and prey items were counted and identified for frogs caught in both artificial arboreal refugia and at breeding ponds. The majority of prey consisted of ants (41.2%) and beetles (29.6%). Both males and females caught in artificial refugia contained greater stomach content mass than those caught at breeding ponds. There was a positive correlation between mass of stomach contents and distance from breeding ponds, with the average number of beetles per stomach increasing with distance from ponds. There was also greater stomach content mass in frogs found in artificial refugia on white oaks than red oaks or sugar maples, but there was no relationship between tree diameter and stomach content mass. These results demonstrate the importance of protecting terrestrial habitat to maintain foraging areas for treefrogs.

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UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, May 30, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **Chris Lechowicz**, herpetologist at the Sanibel-Captiva Conservation Foundation in southwest Florida, long-time CHS member and former CHS President, will talk about his experiences as a researcher and tour co-leader on a month-long trip to Madagascar. He conducted research on all four native tortoises and his PowerPoint slide show will depict the research and the many amazing herps that he encountered.

Our popular Show & Tell meeting will take place on June 27 this year. All members are encouraged to bring a favorite animal and to be prepared to come up on stage and tell us something about the animals they have brought.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum — the **Peggy Notebaert Nature Museum**. This beautiful new building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. A plethora of CTA buses stop nearby.

Board of Directors Meeting
Are you interested in how the decisions are made that determine how the Chicago Herpetological Society runs? And would you like to have input into those decisions? If so, mark your calendar for the next board meeting, to be held June 15. For information as to where the meeting will be held and directions, call Mike Dloogatch at (773) 588-0728.

The Chicago Turtle Club
The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the CTC website: http://www.geocities.com/~chicagoturtle.

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